REMARKS

Claims 1-14 were pending and under consideration.

With this Amendment, claims 1 and 14 are amended, claim 15 is added and claim 7 is cancelled. Accordingly, claims 1-6 and 8-15 are, now at issue.

I. Objection To Specification

Applicants have amended the specification on page 21, line 10 to reflect number "140" rather than "104." Accordingly, Applicants respectfully request withdrawal of this objection.

II. Objection To Claims

Applicants have amended claim 9 so that claim 9 no longer depends from a multiple dependant claim. Accordingly, Applicants respectfully request withdrawal of this objection.

III. 35 U.S.C. § 102 Anticipation Rejection of Claims

Claims 1-6 and 9-14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Rovner (U.S. Patent No. 3,825,823). Applicant respectfully traverses this rejection.

Claims 1 and 14 have been amended to include the magnetic detection device of the magnetic detection means comprises a thin film loop-shaped magnetic core, a thin film excitation coil and a thin film detection coil on a non-magnetic substrate. Rovner, as the Examiner has pointed out, neither discloses or suggests the magnetic detection device of the magnetic detection means is fabricated by forming on a non magnetic substrate the magnetic core of a loop-shape, an excitation coil and a detection coil with the use of a thin film processing. Accordingly, claims 1 and 14, and claims 2-6 and 8-13 that depend from claim 1 are allowable over Rovner. Additionally, with regard to the newly added claim 15, Rovner does not disclose or suggest an insulating layer insulating the magnetic core. Accordingly, Applicants respectfully request withdrawal of this rejection.

IV. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 7-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rovner in view of Yamada et al. (U.S. Patent No. 6,407,547). Applicant respectfully traverses this rejection.

As the Examiner stated, Rovner does not disclose or suggest that the magnetic detection device of the magnetic detection means is fabricated by forming on a non magnetic substrate the magnetic core of a loop-shape, an excitation coil and a detection coil with the use of a thin film processing. However, Applicants respectfully disagree that it would have been obvious to one of skill in the art to combine Rovner with Yamada to derive the claimed invention.

Rovner is directed to an apparatus to detect the direction of an external magnetic field incorporating a flux gate magnetometer having a plurality of sensing coil arrays. (See Abstract). The apparatus includes a plurality of sensing means 21-26 each having a sensing output in response to the flux in the core means of the apparatus. (See Col. 3, lines 12-14). In Rovner, each sensing means 71 and 72 is able to detect directions 180° relative to one another and accuracy is increased based on the number of sensing means. (See Col. 6, line 67 - Col. 7, line 2 and Col. 4, lines 7-17). As a result, Rovner does not disclose or suggest a detection apparatus utilizing one sensing means, and would not likely operate properly with a singular sensing means. Rather, Rovner limits its apparatus to a plurality of sensing means. (See Col. 3, lines 12-14). Conversely, it is the objective of Yamada to provide a sensor capable of detecting in multiple directions with a single sensing element having no angular errors. (See Col. 1, line 65 -

Col. 2, line 5). Thus, it would not have been obvious to one skilled in the art at the time the invention to modify the invention disclosed in Rovner, with the teachings of Yamada to derive claims 7 and 8. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claim 15 requires that a magnetic azimuth device of the magnetic detection means comprise a thin film loop-shaped magnetic core, the magnetic core insulated by an insulating layer and made of a soft magnetic material, a thin film excitation coil, and a thin film detection coil. As discussed above, Rovner does not disclose or suggest that the magnetic detection device of the magnetic detection means comprise a thin film loop-shaped magnetic core, a thin film excitation coil and a thin film detection coil. Further, Rovner does not disclose or suggest the magnetic core being insulated by an insulating layer. Therefore, Applicants respectfully request allowance of claim 15.

V. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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